Amendments to the Drawings:

A single "Replacement Sheet" and a single "Annotated Sheet" of drawings is attached at Appendix A to this Amendment. As shown on the Annotated Sheet, Figure 1 has been amended to show the adjustable gain amplifier **21**.

Attachment: Appendix A containing Replacement Sheet containing Figures 1 and 2 and an Annotated Sheet showing amendments to Figure 1.

REMARKS

Applicants thanks the Examiner for a thorough review of the above-referenced application. As explained more fully below, Applicants have amended the specification and Figure 1 of the drawings to address the informalities raised in the Office Action. In addition, Applicants have amended independent Claim 1 and dependent Claims 2, 4 and 9 to more clearly define the claimed invention. As a result of these amendments, Applicants have canceled Claims 3 and 6. Applicants request reconsideration and allowance of the application and Claims 1-2, 4-5, and 7-10 based upon the Amendments and Remarks set forth herein.

I. Invention.

The present invention embodies an apparatus for equalizing a spectrum of a broadband light source. The apparatus contains an optical splitter, which splits an optical signal into two paths. Along the first path, the signal is filtered using a Long Period Grating (LPG) filter, while the second optical path includes an adjustable gain amplifier structured to amplify to a varying degree, the optical signal propagating there through. An optical combiner then couples the signals from the first and second paths into an output channel. Advantageously, the apparatus is sufficiently tunable to enable an input signal to be attenuated or amplified by at least 10 dB (measured at the output channel).

II. The Objection To The Drawings Is Overcome.

The Office Action objected to the drawings under 37 CFR 1.83(a), asserting that the drawings must show every feature of the invention specified in the claims. Specifically, the Office Action asserts that the adjustable gain amplifier must be shown or the feature canceled from the claims. Figure 1 has been amended to include the adjustable gain amplifier, as previously described on page 14, lines 17-19. As described therein, an adjustable gain amplifier may be provided in the second path to amplify the signal propagating there through. Since the amendment to the drawings merely adds a reference object to show a feature that was disclosed

in the original specification, no new matter has been added in accordance with 37 CFR 1.121(f). Applicants respectfully request that the objection to the drawings be withdrawn.

III. The Objection To The Specification Is Overcome.

The Office Action objected to the disclosure, asserting that the symbols and text surrounding the equations (1) and (2) were incomprehensible. Applicants have submitted replacement paragraph correcting the noted informality and, therefore, respectfully requests that the objection to the disclosure be withdrawn.

IV. The Objections to Claims 2, 9, and 10 Are Overcome.

The Office Action objected to the spelling of the term "tunable" in Claims 2 and 9. Claims 2 and 9 have been amended to correct this informality. Likewise, the Office Action objected to Claim 10, asserting that the abbreviation "ASK" for the recitation "Amplified Spontaneous Emission" is incorrect. Claim 10 has been amended to correct the abbreviation to "ASE". Applicants note that this appears to have been a typographical error occurring at the time the application was filed, as the correct abbreviation is set forth in the claims of the corresponding PCT application. Applicants respectfully request that the objection to Claims 2, 9, and 10 be withdrawn.

V. The Rejection under 35 U.S.C § 112 is Overcome.

The Office Action rejected independent Claims 1-10 under 35 U.S.C § 112, second paragraph, asserting that it is unclear whether the optical power source contained in the recitation "an optical splitter being connectable to an optical power source, for directing at least part of optical power from the optical power source to each of the first and second optical paths" is part of the claimed invention, but Claims 7 and 10 recite limitations that only have meaning as limitations if the optical source is considered part of the invention. Independent Claim 1 has been amended to recite in the preamble that the apparatus is "suitable for use with an optical power source". In view of this clarifying amendment, Applicants respectfully request that the rejection to Claims 1-10 under 35 U.S.C § 112, second paragraph, be withdrawn.

The Office Action rejected Claim 9 under 35 U.S.C § 112, second paragraph, asserting that the recitation "the apparatus is sufficiently tunable" lacks antecedent basis. Applicants have amended dependent Claim 9 to recite that the optical splitter is tunable. In view of this clarifying amendment, Applicants respectfully request that the rejection to Claim 9 under 35 U.S.C § 112, second paragraph, be withdrawn.

VI. The Rejection Under 35 U.S.C § 102(b) Is Overcome.

The Office Action rejects Claims 1, 2, 5, 7, and 8 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,798,566 to Abe et al. (hereinafter "Abe"). To the extent the rejection would be applied against the claims as amended, Applicants respectfully traverse.

Abe discloses a variable optical gain equalizer. The equalizer comprises a variable branching ratio beam splitter for branching an input beam into two light beams. On each of the two light beam paths, there exist optical filters associated with the two branched outputs. There is also an optical coupler for coupling the output light beams together. Abe teaches the "optical filter can be a multilayered dielectric film filter, an etalon filter, various optical fiber grading filters, or any combination of such types of filters." (*See* Column 12, line 4). Further, Abe discloses that the "second optical filter presents a transmittance-wavelength characteristic where the transmittance decreases rightward with respect to the wavelength." (*See* Column 12, line 15).

In contrast, the present invention is directed to an apparatus suitable for equalizing a spectrum or a broadband light source. Independent Claim 1, as amended, recites an optical splitter which produces first and second optical paths. Along the first path, there exists an optical signal filter, and along the second path, there exists an adjustable gain amplifier. An optical combiner is also present in order to combine the paths, at least in part, into an output channel. Abe does not teach or suggest the inclusion of an adjustable gain amplifier provided in the second optical path to amplify to a varying degree, the optical signal propagating there through, as is recited in independent Claim 1. Accordingly, Applicants submit that independent Claim 1, and the claims depending therefrom, as clarified by the above-referenced amendment, include recitations which patentably distinguish the claimed invention over the cited reference.

VII. The Rejection Under 35 U.S.C § 103 Is Overcome.

The Office Action rejected Claim 6 under U.S.C § 103(a) as being unpatentable over Abe, in view of U.S. Patent Application No. 2003/0039448 to Ting et al. (hereinafter "Ting"). The Office Action rejected Claims 3-4 and 9-10 under U.S.C. § 103(a) as being unpatentable over Abe in view of U.S. Patent No. 6,473,540 to Augustsson.

Ting discloses a method and apparatus for tuning an optical device using heat.

Augustsson discloses a device and method for optical filtering comprising four waveguides, each including a reflection section and an optical attenuator. As disclosed in Augustsson, the reflection section is a Bragg grating.

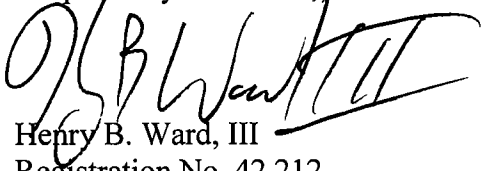
None of the cited references, either singly or in combination, teaches or suggests an apparatus for equalizing a spectrum of a broadband light source, as recited in independent Claim 1, comprising a first optical path and a second optical path; an optical splitter being connectable to an optical power source, for directing at least part of optical power from the optical power source to each of the first and second optical paths; a Long Period Grating (LPG) filter provided in the first optical path for filtering the optical signal propagating there through; an adjustable gain amplifier provided in the second optical path to amplify to a varying degree, the optical signal propagating there through; and an optical combiner for combining at least part of the optical signals from each of the first and second paths into an output channel. Accordingly, Applicants submit that independent Claim 1, and the claims depending therefrom, include recitations which patentably distinguish the claimed invention over the cited references.

CONCLUSION

In view of the amendments to the application and the foregoing remarks, it is respectfully submitted that all of the claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. Examiner Bolda is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 13-4365.

Respectfully submitted,



Henry B. Ward, III
Registration No. 42,212

Moore & Van Allen PLLC
100 North Tryon Street
Suite 4700
Charlotte, NC 28202
Phone: 704-331-1027
Fax: 704-339-5853

ELECTRONICALLY FILED USING THE EFS-WEB ELECTRONIC FILING SYSTEM OF THE UNITED STATES PATENT & TRADEMARK OFFICE ON MAY 5, 2009.

APPENDIX A